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(54) **SMART SHOES WITH ADAPTIVE SAMPLING FOR REHABILITATION AND HEALTH MONITORING**

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(57) **ABSTRACT**

A smart shoe, smart shoe system, and a method of a smart shoe are disclosed. A smart shoe system may be used for monitoring patient activity. The smart shoe system may include a shoe having a plurality of pneumatic pressure sensors. The pressure sensors may be configured to detect pressure at a plurality of points in the sole of the shoe. The smart shoe may also include a microprocessor coupled to the pressure sensors and a GPS integrated circuit. The GPS integrated circuit may be used for correlating position of the smart shoe system to activity data generated by the plurality of pressure sensors. Additionally, the smart shoe system may include a flash memory storage for storing data generated by the microprocessor and pressure sensors.

13 Claims, 6 Drawing Sheets